BRINCOwater

THE꿹 □ηCLEAN꿹 □ηWATER꿹 □ηSC

www.brincowater.com

BRINCOwater

THE꿹□ηCLEAN꿹□ηWATER꿹□ηSC

KEY꿹□ηFOCUS꿹□ηAREAS꿹□η

꿹□η

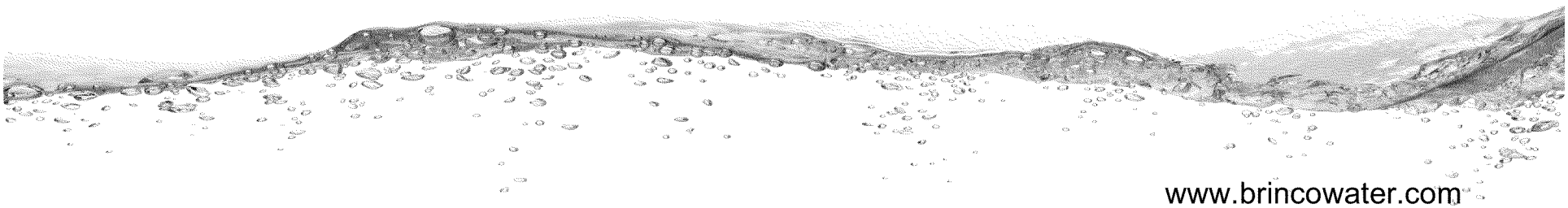
Brinco꿹□ηWater꿹□ηis꿹□ηfocused꿹□ηon꿹□ηthe꿹□ηOil꿹□η&꿹□ηGas,꿹□ηMining customers꿹□ηwith꿹□ηstate꿹□ηof꿹□ηthe꿹□ηart꿹□ηtechnology꿹□ηin꿹□ηprovidin brings꿹□ηtogether꿹□ηincredible꿹□ηengineering,꿹□ηinnovaKon꿹□η&꿹□ηcreaKvity꿹 groundbreaking꿹□ηwater꿹□ηprocessing꿹□η&꿹□ηtreatment꿹□ηapplicaKons.꿹□ηBrin customized꿹□ηto꿹□ηmeet꿹□ηspecific꿹□ηcustomer꿹□ηneeds,꿹□ηincluding꿹□ηthe water꿹□η&꿹□ηwastewater꿹□ηtreatment꿹□ηfaciliKes.꿹□η

꿹□η

KEY꿹□ηFOCUS꿹□ηAREAS꿹□η

꿹□η

- Produced꿹□ηWater,꿹□ηProcess꿹□ηWater꿹□η&꿹□ηIndustrial꿹□ηWastewater꿹□
- Industrial꿹□ηEffluent꿹□ηTreatment꿹□η
- Potable꿹□ηWater꿹□ηTreatment꿹□η
- Wastewater꿹□ηSewage꿹□ηTreatment.꿹□η



www.brincowater.com

BRINCOwater

STATE꿺□ηOF꿺□ηTHE꿺□ηART꿺□

꿺□η
Brinco꿺□ηis꿺□ηusing꿺□ηthe꿺□ηlatest꿺□ηstate-□of-□the-□art꿺□ηtechnology,꿺□ηsu
our꿺□ηmission꿺□ηto꿺□ηbe꿺□ηa꿺□ηtrue꿺□ηpartner꿺□ηin꿺□ηthe꿺□ηindustrial,
industries.꿺□ηOur꿺□ηwater꿺□ηtreatment꿺□ηsoluKons꿺□ηare꿺□ηdesigned꿺□ηto꿺
in꿺□ηthe꿺□ηfield꿺□ηunder꿺□ηthe꿺□ηtoughest꿺□ηenvironments꿺□ηwhere꿺□ηth
deployed.꿺□η
The꿺□ηClean꿺□ηWater꿺□ηUnit꿺□ηis꿺□ηhoused꿺□ηin꿺□ηa꿺□ηclimate-□controlle
built꿺□ηof꿺□ηStainless꿺□ηSteel꿺□ηand꿺□ηAluminum꿺□ηprotecKng꿺□ηthe꿺□ηsy
countless꿺□ηyears.꿺□ηThe꿺□ηanK-□shock꿺□ηframe꿺□ηsystem꿺□ηis꿺□ηhoused꿺
foot꿺□ηtemperature꿺□ηcontrolled꿺□ηcontainer꿺□ηwhich꿺□ηallows꿺□ηthe꿺□ηunit
easily꿺□ηtransported꿺□ηby꿺□ηland꿺□ηor꿺□ηsea,꿺□ηand꿺□ηin-□the-□field꿺□ηm
Clean꿺□ηWater꿺□ηUnit꿺□ηhas꿺□ηa꿺□ηcommunicaKon꿺□ηmodule꿺□ηthat꿺□ηca
equipped꿺□ηwith꿺□ηa꿺□ηGPS꿺□ηphone꿺□ηsystem꿺□ηor꿺□ηsatellite꿺□ηcomma
to꿺□ηtrack꿺□ηand꿺□ηcommunicate꿺□ηwith꿺□ηBrinco's꿺□ηservice꿺□ηdepartment
troubleshooKng꿺□ηand꿺□ηspare꿺□ηparts꿺□ηordering.꿺□η
꿺□η

www.brincowater.com

BRINCOwater

BRINCO꿺□ηWATER꿺□ηSOLUTI

Brinco꿺□ηWater꿺□ηoffers꿺□ηa꿺□ηtwo꿺□ηstep꿺□ηtreatment꿺□ηproc
industrial꿺□ηwater:꿺□η

Step꿺□η1꿺□η–꿺□ηOil꿺□η&꿺□ηOrganics꿺□η

- Remove꿺□ηall꿺□ηTSS꿺□ηcontaminants꿺□η(bacteria꿺□η&꿺□ηsolids)
- Recover꿺□ηall꿺□η□ηfrom꿺□ηthe꿺□ηfeed-□water꿺□η(if꿺□ηpresent)꿺□η
- Output꿺□ηclean꿺□ηbrine꿺□ηwater.꿺□η

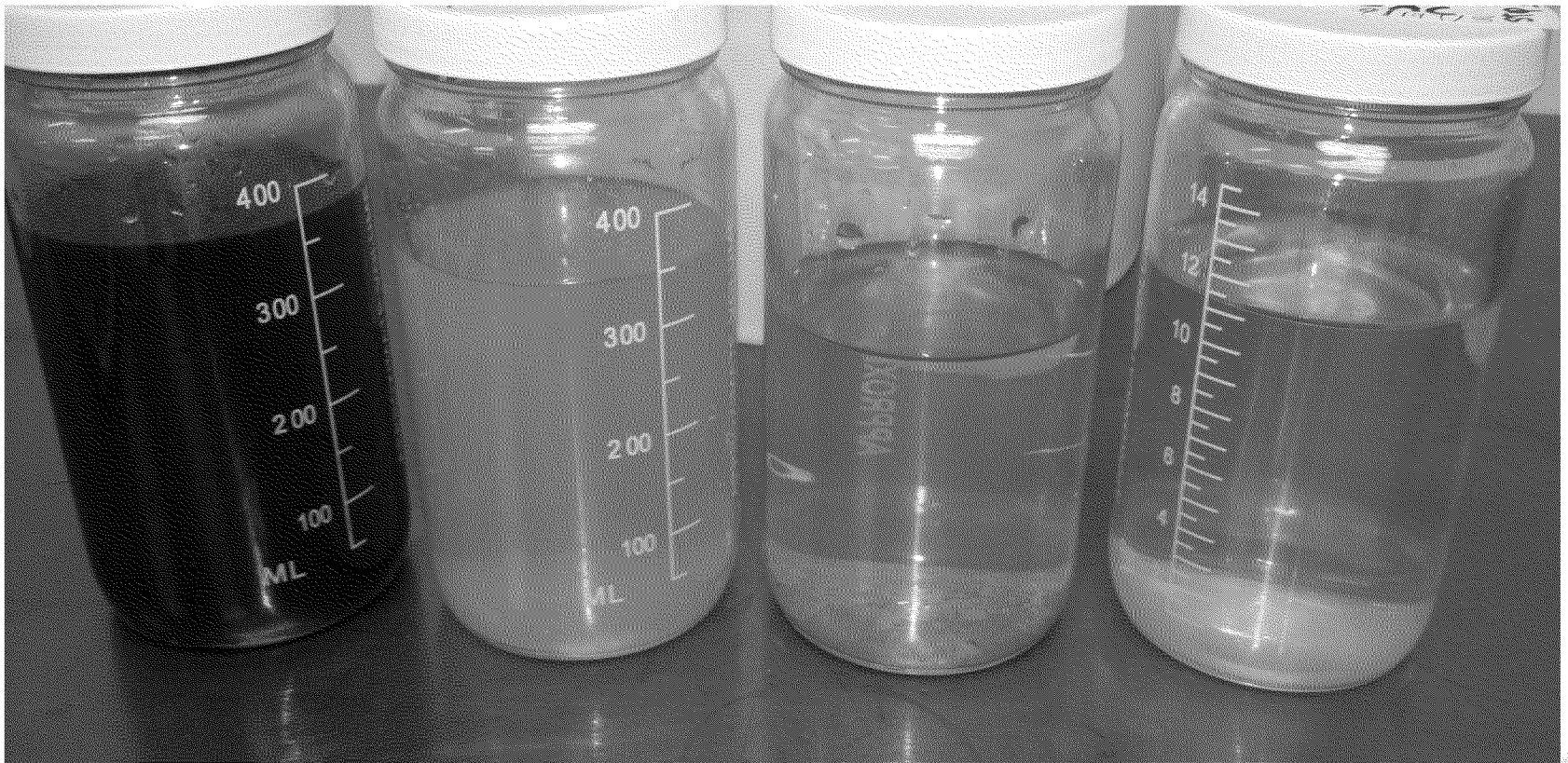
Step꿺□η2꿺□η–꿺□ηDesalinaBon꿺□η

- Desalinate꿺□ηthe꿺□ηclean꿺□ηbrine꿺□ηwater꿺□η(from꿺□ηStep1)꿺
- Output꿺□ηfresh꿺□ηdesalinated꿺□ηwater꿺□η
- Output꿺□ηheavy꿺□ηbrine꿺□ηwater.꿺□η

The꿺□ηefficiency꿺□ηof꿺□ηthe꿺□ηBrinco꿺□ηWater꿺□ηunit꿺□ηoffers꿺□ηstrong
any꿺□ηEnergy꿺□ηCompany꿺□ηor꿺□ηSaltwater꿺□ηDisposal꿺□ηWell꿺□ηbusines
recovered꿺□η&꿺□ηrecycled꿺□ηwater꿺□ηis꿺□ηavailable꿺□ηfor꿺□ηre-use꿺□η

BRINCOwater

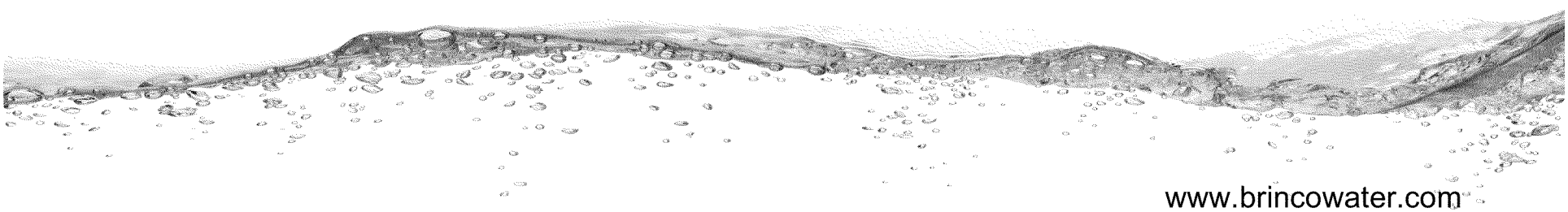
꿺□ηWater꿺□ηTreatment꿺□



www.brincowater.com

BRINCOwater

TECHNICAL꿹□η&꿹□ηSERVI
INFORMATION꿹□η



www.brincowater.com

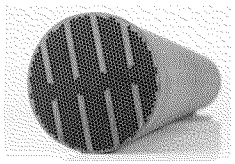
BRINCOwater

CERAMIC MEMBRANE UTILIZING SILICON CARBIDE

Brinco Water ultra filtration ceramic membrane module utilizes groundbreaking silicon carbide (SiC) technology. The membrane substrates as well as the coatings are made from 100% silicon carbide – one of the most durable materials in the world - making it a high value, high performance product for liquid & gaseous filtration.

MEMBRANE PROPERTIES FFEATURES AND BENEFITS

HIGHEST FLUX FOR ANY MEMBRANE MATERIAL
The high flux is reached through high membrane porosity (~45%) and a material with low resistance to transport of water and a low contact angle. reduce your foot print and system costs (less pipes, valves etc.)

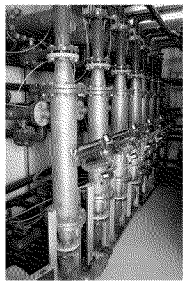


CHEMICALLY INERT pH 0 14
No limitations, fast cleaning, reduced down time during Cleaning in Place (CIP), filtration of acids and alkalis

THERMALLY RESISTANT UP TO 800 °C
Steam cleaning, more efficient chemical cleaning, and high temperature applications

HYDROPHILIC MATERIAL (WATER LOVING)
Unmatched performance in oil/water separation

ISO ELECTRIC POINT pH 2.4 – Repels Negatively Charged Components in Most of the pH Range
The membranes have unmatched performance in oil/water separation & reduces membrane fouling making it easier to clean.



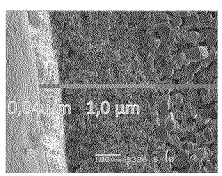
EXTREMELY HARD AND DURABLE MATERIAL 2930 +/- 80 kg/mm3 (Vickers scale)
Long life time, less down time and maintenance, stable operation, cleaning with shock pulses (BPH system), hard membrane surface not destroyed by sharp particles .

PORE SIZE
Membranes available in pore size 3/1/0,1/0,04 micron. Brinco Water standard membrane utilizes 0,04 micron. Many application areas: wastewater, produced water, industrial applications, pre .RO, drinking water & ballast water.

CHLORINE SOLVENTS & OXIDIZERS
Will perform with any concentration of chlorine. Completely stable with any type or concentrate of solvents & oxi dizers.

SIC MEMBRANE TECHNOLOGY

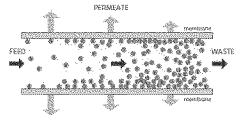
The ceramic membrane carrier is based on the so .called honeycomb or monolith structure . A number of parallel flow channels extend through the element in the porous support structure. The feed stream is introduced under pressure at one end of the element and flows through the channels during processing. The portion of the liquid passing through the membrane, the permeate, flows into the porous structure of the element. The combined volume of permeate from all flow channels flow toward the outer shell of the monolith support and is removed continuously.



The actual ceramic membranes are formed on the walls of the flow channels extending through the porous ceramic structure of the element by slip casting a

BRINCOwater

specific coating of ceramic particles according to the desired pore size and distribution. The coating material, containing the silicon carbide, is dried and sintered. This process ensures a strong bond with the carrier material and provides the membrane with its unique ruggedness and durability. Several layers may be deposited on top of each other in order to reach the desired combination of membrane pore sizes and water flux.



Our range of CoMem and CoMem Conduit elements are designed for cross flow filtration for filtration of liquids with high amounts of suspended solids, oil, algae, bacteria etc.

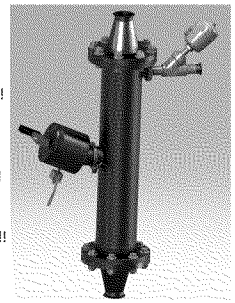
Cross flow filtration is a filtration method, where the feed flow is tangential to the surface of the membrane in order to sweep rejected particles and solutes away (see figure 3 below). The feed fluid is separated into two product streams, the permeate, which is depleted of the rejected particles, and the retentate (or waste/concentrate), which is enriched in those particles.

The great advantage of using cross flow filtration is the superior handling of liquids with high solids content, as the retained particles are being continuous removed from the membrane surface. In addition to the cleaning mechanism of cross flow filtration, the tubular membranes can be cleaned with the means of a traditional back wash, back pulse and/or periodic chemical cleaning.

We also utilize membranes in dead end filter mode for liquids with lower amount of suspended solids. The membrane substrate has a dead end design, which yields a more cost efficient filtration performance compared to other filtration principles, such as sand filtration.

AUTOMATED CLEAN IN PLACE

Membrane fouling during filtration is a common phenomenon that heavily influence membrane performance due to the impact on the permeate flu x and trans .membrane pressure. In order to maintain the high performance of the SiC membranes, an effective regeneration device has to be utilized. At Brinco Wate we utilize a pulse generator (the Backpulse Hammer), which shoots high frequency "block" pulses, from the permeate side, back through the membrane and thus maintain the high performance by keeping the membrane clean and free of foulants.



LIFECYCEL COST ANALYSIS

Capital cost for ceramic membrane systems is more when compared to polymeric membranes. However, the lifespan of our ceramic membranes is +20 years, whereas a polymeric membrane will only last 3 4 years.

Operating expenses are reduced significantly with ceramic membrane installations. There are no chemicals needed for membrane cleaning and therefore no chemical disposal costs either. There is no lost operational production time due to the high performance of the ceramic membranes. Ceramic membrane systems also require significantly less power costs compared to polymeric membrane system s.

The operations of a facility will see a significant reduction in OPEX by moving from polymeric membranes to ceramic membranes.

Please contact us for more information: info@brincowater.com

Brinco Water.com Industrial Water Treatment Silicon Carbide Ceramic Membranes Packaged Water Treatment Units Modular Configuration

Brinco Water.com Industrial Water Treatment Silicon Carbide Ceramic Membranes Packaged Water Treatment Units Modular Configuration

MEMBRANE TECHNOLOGY

BRINCOwater

Hi-□Tech꿹□ηEquipment꿹□η

- Brinco꿹□ηWater꿹□ηuses꿹□ηadvanced꿹□η membrane꿹□ηtechnology꿹□η
- Treatment꿹□ηunits꿹□ηare꿹□ηfully꿹□ηaut built꿹□ηself-□cleaning꿹□ηsystems,꿹□ηdata remote꿹□ηmonitoring꿹□η
- Treatment꿹□ηunit꿹□ηbuilt꿹□ηwithin꿹□ηa stainless-□steel꿹□ηframe,꿹□ηwhich꿹□ηis꿹 climate꿹□ηcontrolled꿹□ηcontainer꿹□η
- The꿹□ηsystem꿹□ηis꿹□ηshipped꿹□η&꿹□ condiKoned,꿹□ηstainless꿹□ηsteel,꿹□ηpaten container꿹□ηdesigned꿹□ηto꿹□η'sway'꿹□η for꿹□ηshipping꿹□η&꿹□ηinstallaKon
- On-□shore꿹□η&꿹□ηoff-□shore꿹□ηsoluKons

www.brincowater.com

BRINCOwater

PROJECT꿹 □ɳREFERENCES꿹 □ɳ

The꿹 □ɳlist꿹 □ɳbelow꿹 □ɳis꿹 □ɳa꿹 □ɳselecKon꿹 □ɳof꿹 □ɳoperaKonal꿹 SiC꿹 □ɳ꿹 □ɳ꿹 ceramic꿹 □ɳmembrane꿹 □ɳtechnology꿹 □ɳ꿹 □ɳ

Company	Region	Project Description	Processing (m3/day)	Year Commissioned
Oil company	Romania	Produced Water	528	2014
Industrial	Korea	Seawater, Pre-RO	100,000	2013
Municipal	Denmark	Ground water remediation	1,680	2015
Industrial	UK	Oily Waste Water	1,200	2013
Bio Gas Plant	China	Manure	1,800	2015
Bio Gas Plant	Denmark	Degassed manure	240	2014
Pharmaceutical	China	Protein	600	2014
Industrial	Germany	Metals Processing (Oily Water)	360	2013
Mining	China	Coal mine tailings pond water	2,400	2014
Municipal	Denmark	Swimming pool water	480,000	2013
Industrial	Israel	Pre-RO	6,000	2013
Oil company	Canada	Oily Water, Produced Water from Oil and Gas	8,000	2013
Oil company	Colombia	Produced Water treatment from Oil and Gas	100,000	2014
Oil company	China	Produced Water treatment from Oil and Gas	100,000	2014
Oil company	Denmark	Produced Water treatment from Oil and Gas	960	2014
Oil company	USA	Produced Water treatment from Oil and Gas (several projects)	100,000	2013
Pharmaceutical	Denmark	Ground water (removal of iron and manganese)	1,200	2013
Industrial	Denmark	Scrubber water (power plant), Pre-RO	240	2014
Industrial	Germany	Scrubber water (power plant), Pre-RO	3,600	2013
Industrial	Egypt	Textile wastewater - Pre-RO	3,600	2013
Industrial	India	Textile wastewater - Pre-RO	4,800	2014
Refinery	Mexico	Tailings Pond - Petrochemical	1,680	2015
Refinery	USA	Cooling Tower Blow Down Water	150	2015

BRINCOwater

Long-□term꿹□ηService꿹□ηAgreer

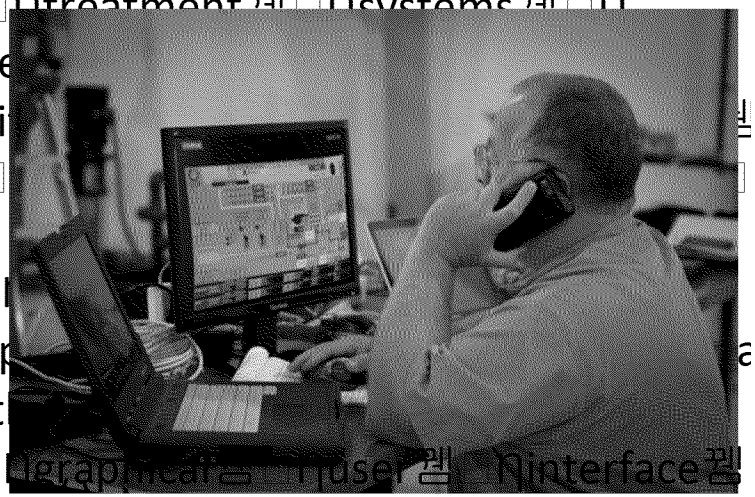
- Brinco꿹□ηWater꿹□ηseeks꿹□ηa꿹□ηlong-□term꿹□ηpartnership꿹□ηap mining꿹□η&꿹□ηindustrial꿹□ηmarkets꿹□η
- Working꿹□ηhand-□in-□hand꿹□ηwith꿹□ηa꿹□ηmajor꿹□ηenergy,꿹□ηr to꿹□ηprovide꿹□ηenhanced꿹□ηvalue-□add꿹□ηservices꿹□η
- Brinco꿹□ηWater꿹□ηcan꿹□ηscale꿹□ηits꿹□ηtreatment꿹□ηsoluKons꿹 faciliKes꿹□ηto꿹□ηlarge꿹□η(>100,000BPD)꿹□ηfaciliKes꿹□η
- Treatment꿹□ηunits꿹□ηat꿹□ηdisposal,꿹□ηrefining꿹□η&꿹□ηmining꿹
  - Provision꿹□ηof꿹□ηtreatment꿹□ηequipment꿹□ηto꿹□ηfacilitate꿹□ or꿹□ηdesalinated꿹□ηwater꿹□η&꿹□ηheavy꿹□ηbrine꿹□η
  - Provision꿹□ηof꿹□ηtruck꿹□η/꿹□ηequipment-□wash꿹□ηfaciliKes꿹 water)꿹□η
- Treatment꿹□ηunits꿹□ηat꿹□ηwater꿹□ηwell꿹□ηstaKon꿹□ηlocaKons꿹 water꿹□ηto꿹□ηremove꿹□ηcontaminants,꿹□ηTSS꿹□η&꿹□ηbacteria꿹 water꿹□ηquality꿹□ηto꿹□ηoperators꿹□η
- Provision꿹□ηof꿹□ηlabor꿹□η&꿹□ηequipment꿹□ηunder꿹□ηlong-□ter compensaKon꿹□ηbased꿹□ηon꿹□η$/bbl.꿹□η꿹□ηNo꿹□ηcapital꿹□ηo 꿹□η꿹□η

www.brincowater.com

BRINCOwater

Remote꿺□ηMonitoring꿺□η

The꿺□ηBrinco꿺□ηWater꿺□ηmobile꿺□ηwater꿺□ηtreatment꿺□ηsystems꿺□η
come꿺□ηwith꿺□ηan꿺□ηadvanced꿺□ηsurveillance
allowing꿺□ηus꿺□ηto꿺□ηmonitor꿺□ηthe꿺□ηuni
world꿺□ηvia꿺□ηlive꿺□ηdata꿺□ηfeed꿺□ηto꿺□
꿺□η



The꿺□ηstate-□of-□the-□art꿺□ηcommunicaKon꿺□
our꿺□ηengineers꿺□ηto꿺□ηmonitor꿺□ηthe꿺□ηp
treatment꿺□ηunit꿺□ηremotely,꿺□ηallowing꿺□ηt

- Monitor꿺□ηthe꿺□ηeasy꿺□ηto꿺□ηuse꿺□ηgraphical꿺□ηuser꿺□ηinterface꿺
- View꿺□ηtrends꿺□η&꿺□ηlog꿺□ηdata꿺□η–꿺□ηmonitor꿺□ηcontaminant꿺□
  output꿺□ηwater꿺□ηquality꿺□η&꿺□ηenvironmental꿺□ηcompliance꿺□ηrepor
- Analyze꿺□ηUnit꿺□ηPerformance꿺□η–꿺□ηsurveillance꿺□η&꿺□ηtrend꿺□ηcu
  our꿺□ηcontrol꿺□ηcenter.꿺□η꿺□ηAdjust꿺□ηunit꿺□ηparameters꿺□ηremote
  with꿺□ηour꿺□ηunits.꿺□η
- The꿺□ηcontrol꿺□ηroom꿺□ηuKlizes꿺□ηa꿺□ηprevenKve꿺□ηmaintenance꿺□
  online꿺□ηmonitoring꿺□ηsystem.꿺□η꿺□ηOur꿺□ηtechnical꿺□ηsoluKon꿺□η&
  customer꿺□ηwith꿺□ηthe꿺□ηbest꿺□ηservices꿺□η&꿺□ηlowest꿺□ηtotal꿺□

BRINCOwater

OperaBons,꿺□ηMaintenance꿺□η&꿑

Factory꿺□ηtrained꿺□ηservice꿺□ηresponse꿺
the꿺□ηcustomer꿺□ηwith꿺□ηconfidence꿺□ □η
remain꿺□ηreliable,꿺□ηeven꿺□ηin꿺□ηremo

OperaBons꿺□η
Brinco꿺□ηWater꿺□ηlabor꿺□ηwill꿺□ηmanage꿺□η&꿺□ηoperate꿺□ηthe꿺□η
equipment꿺□ηon꿺□ηsite.꿺□η꿺□η꿺□η

Servicing꿺□ηthe꿺□ηUnits
Brinco꿺□ηWater꿺□ηwill꿺□ηundertake꿺□ηall꿺□ηplanned꿺□η&꿺□ηreacKve꿺□ηs
our꿺□ηequipment.꿺□η꿺□η꿺□η
꿺□η
Spare꿺□ηPart꿺□ηDistribuBon꿺□η
Spare꿺□ηparts꿺□ηform꿺□ηpart꿺□ηof꿺□ηour꿺□ηmaintenance꿺□ηservice꿺□ηof
distribuKon꿺□ηthrough꿺□ηa꿺□ηnetwork꿺□ηof꿺□ηglobal꿺□ηdistribuKon꿺□ηcent
increase꿺□ηunit꿺□ηoutput.꿺□η

www.brincowater.com

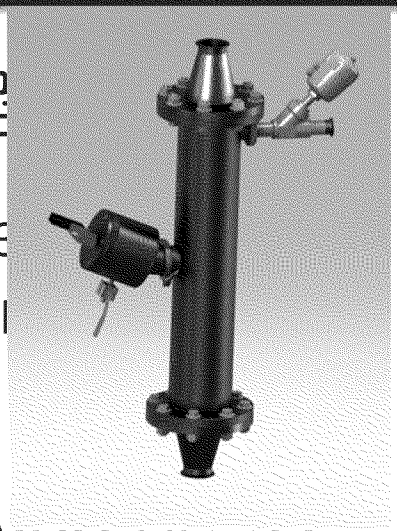
BRINCOwater

Contact꿹□ηUs꿹

꿹□η

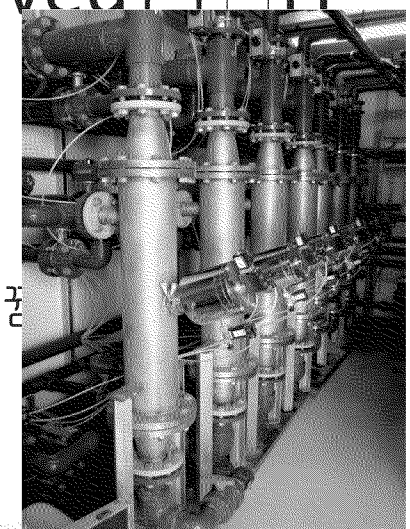
Tel:꿹□η1-□713-□449-□73

info@brincowater.com꿹□



Regions꿹□ηServed

- USA꿹□η
- Canada꿹□η
- Mexico꿹□η
- UK꿹□η&꿹□ηEurope꿹
- Asia꿹□η



SF/ANSI꿹□ηSTANDARD꿹□η61꿹□ηDRINK
SYSTEM꿹□ηCOMPONENTS꿹□η

Certified to NSF/ANSI 61-G

NSF-□DBA1935/2004꿹□η
APPROVED꿹□ηFOR꿹□ηF
CONTACT꿹□η

www.brincowater.com